# BUILDERS AND INSTALLATION PACK



NOTE: By complying with the instructions in this pack your Parkwood Pellet fire will meet NZ/Aus Safety Standard ASNZS2918-2001



REV C July 2008



Pellet Fires



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DATE 30/04/08 DRAWING NO:5



Pellet Fires

# PELLET FIRE ASSEMBLY

#### REMOVING THE FIRE FROM THE PALLET

1.Remove all packaging.

- 2. There are 2 brackets fixing the Fire to the pallet. Use an 8mm socket to remove the brackets. These brackets may be used as seismic restraints.
- 3.Clean and remove all marks from any plated Door Covers or Ash Sills before initial firing or they will permanently mark the plated surface.

#### PEDESTAL HEARTH ASSEMBLY

- 1. Carefully place the back of the Fire on the wood pallet that the fire was supplied on.
- 2.Using an 8mm socket, install the four (4) bolts supplied with the Pedestal Hearth in the holes on the bottom of the Fire Base plate. Ensure that the supplied lock washers are fitted and leave the bolt heads about 5mm out.
- 3.Drop the Hearth Pad Pedestal onto the bolts and lock into the correct keyhole position before tightening the bolts.
- 4. Taking care not to damage the rear of the Pedestal Hearth (or the floor surface), stand the Fire upright and place the fire in position. An upside down carpet mat is helpful to shift the fire and prevent damage to floor surfaces. Parkwood recommends that the fire is lifted and moved by two people.



NOTE: Parkwood Fires can be installed on a combustible floor using the Pedestal Hearth Pad (for example, linoleum or wooden flooring). A Pedestal Hearth Pad is not required if a non-combustible surface (Tiles/Slate) protrudes 150mm forward of the Fire Box Door opening. A non combustible pad (Available from Parkwood) may be used to extend an existing hearth to the required 150mm.



# INSTALLATIONS

#### INSTALLATION PRECAUTIONS

IMPORTANT: Read all instructions carefully before starting the installation. Failure to follow instructions may result in damage to the Fire, property damage, bodily injury, or even death.

- Look at the Instruction Label inside the hopper lid to find the serial number. Write the serial number of the Fire and the Installers Registration Number on the Warranty Registration Card and post it to Parkwood Pellet Fires within 30 days of the installation. Failure to do so may void your Warranty and will make servicing and maintenance questions difficult to answer, this could result in needless inconvenience in the future.
- 2. When installing the Fire:
  - 1. The correct safe clearances must be strictly adhered to. Refer to relevant diagrams in this pack.
  - 2. Allow for adequate accessibility for servicing and proper operations.
  - 3. When establishing clearances, measure from any combustible projection, such as; shelves, windowsills, Fireplace mantles above the appliance, etc.
  - 4. Proper Flue installation is required for safe, reliable operation.
  - 5. Use an upside down carpet mat to slide the fire into position and to prevent floor damage.

•DO NOT INSTALL A FLUE DAMPER IN THE EXHAUST FLUEING SYSTEM OF THIS FIRE. •DO NOT CONNECT THIS FIRE TO A CHIMNEY OR FLUE SERVING ANOTHER APPLIANCE. •THIS FIRE MUST BE CONNECTED TO A PROPER FLUE SYSTEM WHILE IN USE.

#### **ELECTRICAL INFORMATION**

THE USE OF A SURGE PROTECTOR IS STRONGLY RECOMMENDED.

If a power point needs to be installed, a qualified Electrician must carry this task out.

Parkwood Pellet Fires are supplied with a three-prong (earthed) plug. The Fire will not operate properly in a non-compliant improperly earthed electrical outlet. Contact a local electrician to ensure proper electrical power is provided to the Fire. To avoid any shock hazard, the Fire should be plugged directly into a properly earthed three-prong receptacle, preferably, a power surge device. Do not cut or remove the earth prong from the plug.

Ensure that the electrical cord is in good condition and is not (or has not been) trapped under the Fire and that it is clear of any hot surfaces or sharp edges. Inspect the power cord for damage before plugging into a mains supply. If the power cord becomes damaged, a replacement power cord must be purchased from your Parkwood Pellet Fires Distributor.

The power cord must remain accessible at all times. To avoid the risk of electric shock, always disconnect the power cord before installing or servicing the Fire. Never install or service the Fire with wet hands and replace all panels and components before operating the Fire.



#### SEISMIC RESTRAINTS

Check with your local Building Inspectors / Code to determine whether the Fire is required to be bolted to the floor.

Parkwood recommends that all Free Standing Fires are bolted to the floor to prevent accidental movement which may result in flue seal damage. This is particularly important when fires are positioned on tiles or other smooth surfaces.

Fires mounted on pedestal hearths can be restrained by using the two (2) 10mm holes at the rear of the fire. The brackets which fixed the Fire to the wood pallet (Fixing Brackets) may be used as seismic restraints. On Insert models, Fixing Brackets can also be attached to the sides of the Fire Base Plate by using the holes located behind the Insert Surround Panels or a chain can be attached to the fire using a "D" shackle in one of the redundant Fuse Holders on the rear of the Fire Base Plate.



#### **POSITIONING OF THE PELLET FIRE**

1.Position the Fire in a large open room that is centrally located in the home. Direct the Fire so that the Convection Fan will blow hot air into the area that requires heating. For example:

Try not to position the Fire so that the Convection Fan blows air into a wall or opposite an exterior door.

If possible, position the Fire on an exterior wall and direct the Fire to an interior door so that the Fire will firstly heat the principal room, then fan force centrally heat other areas of the home when the interior door is opened.

2. Check clearances from combustibles. Refer to relevant diagrams in this pack for dimensions.

- 3. Check the location of the power point.
- 4. You can flue the Fire internally (check for structural beams and trusses where the proposed flue passes through the ceiling), externally behind the Fire or flue an existing masonry chimney with a 75mm stainless steel inner flue.
- 5.All single skin Flue Components must have 75mm safe clearance to combustibles. Double skin flue components must have 25mm safe clearance to combustibles.
- 6. Ensure curtains are unable to come into contact with any surface of the fire.

Refer to the following drawings for correct placement and minimum clearances for installation.





# X= Minimum of 25mm to lined flue or 75mm to unlined flue.

INTERNAL INSTALLATION PLAN

MODELS: MAXI, COMPACT DATE 30/04/08 DRAWING NO:7

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#### **DESIGNING A FLUE**

Pellet Fires have more installation options than any other solid fuel appliance. Standard installations are illustrated in the drawings following. Variations to the standard installations are perfectly acceptable when considering the following;

All Parkwood Pellet Fires must have a minimum vertical flue length of 1.2m to prevent poor performance of the fire or smoke entering the room during a power failure.

Once the positioning of the Pellet Fire and the installation type has been established it is important that you design a flue system that ensures gas velocity and temperatures are maintained. If the flue system is too long, contains excessive horizontal sections or several elbows, the exhaust fan may not be able to overcome the resistance offered by the 75mm system and the gasses may cool and form creosote in the flue system before they are vented. The fire may perform poorly as a consequence of this.

Parkwood strongly recommends that the installation configurations illustrated in this manual are adhered to.

#### **RESTRICTIVE FLUE DESIGNS**

Gas leakage is more likely where the system design or other problems cause high pressure in the flue. Short flue systems may produce low pressures and less likelihood of leakage. One of the most restrictive aspects of a pellet flueing system is a horizontal section. Horizontal runs of pellet flue should not exceed 1.2m. Where the flue system incorporates several elbows or is very long, it may be advisable to increase the diameter irrespective of the equivalent length calculation. The larger flue will allow the same amount of gas to flow, but at a lower pressure. Also, keep in mind, that a relatively long system that is all vertical may not be restrictive because of the natural draft assistance.

Refer to an authorised Parkwood Distributor for advanced restrictive flue designs.



# INSTALLATION CONFIGURATIONS

# STANDARD INTERNAL FLUE INSTALLATION

Parkwood recommends an internal vertical installation as the preferred installation. The vertical rise assists the Exhaust Fan with natural draft, wind induced flueing failure will not occur and extreme cold cannot cool the gasses before they are flued or cause condensation to form as can be the situation with some external installations. In addition, radiant heat from the flueing is retained within the home.

#### STANDARD INTERNAL FLUE INSTALLATION INSTRUCTIONS

- 1. Choose a Fire location that is suitable. Refer to relevant section of this pack.
- 2. Place a non-combustible Hearth Pad where / if necessary.
- 3. Install the Clean Out Tee and Elbow, place the Ceiling Ring over the Elbow. Place the Fire on the Pedestal Hearth Pad (if installed on a combustible surface) and place the Fire in position so that when the Flue is installed vertically, it will be at least 25mm away from a combustible wall. Ensure ceiling ring clears scotia rail.
- 4. Use a Plumb Bob to establish the center of the flue on the ceiling. Ensure that there are no obstacles in the roof space where the flues is to pass, Use a divider set at a radius of 85mm to scribe a 170mm circle on the ceiling. Use a plaster panel hole saw to cut the hole out.
- 5. Use a Plumb Bob to establish the center of the flue on the roof.
- 6. Install the Flue upward from there. When you reach the ceiling, make sure that the Inner & Outer Flue goes through the Wall / Ceiling Ring.
- 7. Fit a 100mm Clamp Support Bracket on the Cleanout Tee if there are more than six (6) 1.2m lengths of flue to support the weight of the flue.
- 8. When using double skin flue components a 25mm clearance is required from all combustibles. Single skin flue components must have a 75mm safe clearance from combustibles. For wall and ceiling penetrations; additional safe clearance (75mm from the inner flue) is met by installing a Parkwood supplied Wall / Ceiling Ring. Fit a non combustible shield (12mm from the combustible surface) if safe clearances for flue components cannot be achieved.
- 9. Finally, extend the Flue to go through the roof and flash the roof penetration.
- 10. Do not sit the Cowl on the outer flue; ensure that there is a minimum of 10mm gap to allow natural upward draft. A Spacer should be used to centralize the inner flue to the outer flue beneath the Cowl and above the clean out Tee.
- 11. Ensure flue extends from roof 600mm from point of exit.

NOTE: The 150mm distance between the rear of the Fire and the rear of the Clean Out Tee illustrated on the Diagram above is only to indicate the approximate distance that Installers should allow for Flue at the rear of the Fire.





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# STANDARD EXTERNAL FLUE INSTALLATION

An external installation is often used when the customer does not want the Flue to be visible, or if the Pellet Fire will sit too far forward in the room for an internal installation to be practical, or in a corner where a hip prevents an internal install.

#### STANDARD EXTERNAL FLUE INSTALLATION INSTRUCTIONS

- 1. Choose a Fire location that is suitable. Refer to relevant section in this pack.
- 2. Place a non-combustible Hearth Pad where / if necessary. Check wall and roof construction will not interfere with proposed flue position.
- 3. Determine the centre point of where the flue is to exit the wall of the dwelling and use a divider set at a radius of 78mm to scribe a 155mm circle on the wall. Drill a hole through the wall to establish the centre point on the exterior of the wall and scribe a 155 mm circle on the exterior of the house, cut the hole in the dwelling wall.
- 4. Connect a 75mm and 100mm Flue to the fire and pass them through the dwelling wall ensuring that the Wall Thimble is sealed vermin and waterproof with silicone. Connect a Clean Out Tee in a position so that when the Flue is installed vertically, it will be a minimum of 25mm away from a combustible wall. Ensure ceiling ring fit on scotia.
- 5. Use a Plumb Bob to establish the center of the flue on the soffit and use a divider set at a radius of 78mm to scribe a 155mm circle on the soffit and cut the hole in the soffit.
- 6. Use a Plumb Bob to establish the center of the flue on the roof, cut the hole in the roof.
- 7. Install the Flue upward from there. When you reach the soffit, make sure that the Inner & Outer Flue goes through a Ceiling Ring to provide adequate safe clearance.
- 8. When using double skin flue components a 25mm clearance is required from all combustibles. Single skin flue components must have a 75mm safe clearance from combustibles. For wall and ceiling penetrations; additional safe clearance (75mm from the inner flue) is met by installing a Parkwood supplied Wall Thimble / Ceiling Ring. Fit a non combustible shield set 12mm off combustible surface if safe clearances for flue components cannot be achieved.
- 9. Finally, extend the Flue to go through the roof and flash the roof penetration.
- 10. Do not sit the Cowl on the outer flue; ensure that there is a minimum of 10mm gap to allow natural upward draft. A Spacer should be used to centralize the inner flue to the outer flue beneath the Cowl and above the Cleanout Tee.
- 11. Ensure flue extends from roof 600mm from point of exit.





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DRAWING NO:12

# STANDARD INSERT INSTALLATION

- 1. Parkwood Pellet Fires are designed to be inserted into existing fireplaces or new cavities, minimum depth 450mm, minimum width of the cavity is 900mm. Minimum height of the cavity is 607mm (add 25mm if a pedestal hearth is fitted).
- 2. The outer rear panels of the Fire (The Pellet Fuel Hopper) that are contained in the fireplace or the insert cavity remains at ambient temperature (cold to touch) and are not affected by combustion (that is contained in the fire box) or the passage of exhaust gasses.
- 3. Parkwood recommends that insert cavities are lined with Gib Board Fireline (unpainted). A minimum of 75mm clearance is required around the inserted portion (rear 250mm) of the Fire for ease of maintenance.
- 4. The Fire requires adequate airflow to operate properly. While installing the Fire, verify that the location will not interfere with adequate air supply. A 25mm diameter goose neck pipe may need to be fitted to the chimney flashing if there is inadequate air supply.
- 5. The Fire should be installed in such a manner that the Surround Panels of the Fire remain accessible. This provides for ease of service and maintenance to the Fire. Custom size surround panels are available on request.
- 6. If the insert fire is to be installed into a previously used chimney, the chimney must be swept prior to installation. Failure to do this may result in soot being drawn into the convection fan and blown into the room.

#### STANDARD INSERT INSTALLATION INSTRUCTIONS

- 1. Ensure that the hearth, where the Fire and Surround Panels sit is level. Plaster or shim as necessary to make the Fire level.
- 2. Assemble the Surround Panels to the Fire (ensure that the earth wire is connected to the PCB mounting screw with the nut provided), connect a Cleanout Tee to the Exhaust Pipe on the Fire and check that the Fire fits in the cavity. Check that the safe clearances are achieved and pull the fire forward.
- 3. Connect 75mm Stainless Steel Inner Flue to the flexible Stainless Steel Flue and run the flue to the top of the chimney. Ensure that a 75mm safe clearance between single skin flue components and combustibles is maintained. Seal all joints and seams with High Temp Silicon.
- 4. Fit a 75mm Clamp Support Bracket on the lower end of flue and fix to wall.
- 5. Place the Fire in position and connect the Flexible Flue to the Clean Out Tee. Close the Surround Panels, (see following instructions).
- 6. If a Dektite(Rubber Boot) flashing is to be used, ensure a section of 100mm Flue is used to pass through the flashing. The 100mm Flue must run to within 20mm of the Cowl. Do not sit the Cowl on the 100mm flue. A Spacer should be used to centralize the inner flue to the outer flue beneath the Cowl and at lower end of flue.
- 7. Ensure flue extends from roof 600mm from point of exit.
- 8. Refer to section on Seismic Restraints if required by your local authority.



#### INSTALLING THE SURROUND PANELS

- 1. After leveling and locating the Fire and installing flueing and power, pull the Fire out from the Fireplace to allow the Surround Panels to be installed.
- 2. The Insert Surround Panels are designed to mount 365mm back from the front of the Fire just behind the Side Panel air vents.
- 3. Attach Lock Brackets to either side of Top Surround Panel using screws supplied.
- 4. Position the Top Surround Panel piece on top of the Fire and attach it with the self-tapping screws provided.
- 5. To mount the Side Surround Panels, position the left and right Side Panels on their respective sides positioned 365mm back from the face of the Fire and slide tabs into slots on the Insert Fires side panels.
- 6. Connect the earth lead from the PCB to the bottom right corner of the PCB using existing PCB mounting screw
- 7. Fix the Side Surround Panels to the ends of the Lock brackets on the Top Surround Panel with the screws provided.
- 8. Push Insert back against the face of the Fireplace ensuring the rear edges seal up against the Fireplace facing.



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## **INSTALLERS FLUE INSTRUCTIONS**

NOTE: You will require a tube of high temperature silicone (260°C) for this installation.

Pellet Fires differ from most other wood burning appliances in that they do not rely on natural draft produced by a chimney. Instead the flows of combustion air and exhaust gasses are forced with a fan. A Pellet Fire Flue operates under positive internal pressure, a condition that does not occur with natural draft systems. Another important difference is that Pellet Fire exhaust temperatures are much lower than traditional wood heaters; you can touch an operating Pellet Fire Flue without burning yourself.

These two characteristics mean that Pellet Fire flue is very different from those used for traditional wood heaters.

Unlike conventional flue, Pellet Fire flue is exposed to positive pressure. Each seam and joint must be sealed airtight. Installers must seal all joints and cleanout tees with high temperature silicone to prevent any products of combustion from leaking. The need to seal the joints increases the importance to design a flue that can be cleaned with little or no dismantling.

NOTE: IF THE FLUE LEAKS, A THIN LAYER OF CARBON WILL DEPOSIT THROUGHOUT THE DWELLING; in this event the owner may not necessarily smell anything unusual.

The Fire must have a minimum of 1.2m vertical rise on the Flue, this assists the natural draft necessary to clear smoke from the Fire box in the event of the Exhaust Fan or power failing. Failure to do so may result in smoke entering the room during a power outage or Exhaust Fan failure.

The 75mm Flue, Clean out Tee and Offset Elbows are manufactured from 304-2B Stainless Steel. Stainless Steel is necessary to withstand the high temperatures incurred in the event of a flue fire, which is generally caused by a creosote build up in the Flue. Creosote is a black tar like build up produced by high water content pellets or incomplete combustion. Painted 100mm steel outer flue is fitted to all internal freestanding installations. An external freestanding installation ordinarily uses galvanized outer flue.

A Clean Out Tee must be fitted to all installations. The Cleanout Tee is fitted directly onto the Exhaust Fan exhaust pipe, which protrudes from the rear of the Fire for all installations except an external installation (flue runs up the exterior of the house). In an external installation a length of flue (double skin) is fitted to the Exhaust Fan manifold and passes through the exterior wall directly behind the Fire (flash both sides of the wall with a Wall Thimble) and the Cleanout Tee is fitted to the double skin horizontal flue. The Cleanout Tee and Elbow can be painted with a high temperature black paint if they are visible. Vermin and water proof the Wall Thimble / Ceiling Rings with silicone on External Installations.

The safe clearance for all double skin flue components is 25mm from a combustible surface. The safe clearance for all single skin flue components is 75mm from a combustible surface. Fit a shield 12mm off the combustible surface if safe clearances cannot be achieved.



All Parkwood Pellet Fires supplied flue is 1200mm long and crimped at one end so that it fits into the receiving flue component. All joins on all stainless steel flue components must be sealed with a minimum of 260° Celsius heat resistant silicone sealant, they must overlap to full depth of crimp and be fixed in place with three stainless steel rivets.

To centre the Inner flue from the Outer Flue a spacer should be used at the top and lower ends of the flue.

Where practical, the flue should be supported every 2 meters of vertical rise.

Ensure the top edge of the end cap on the Clean Out Tee is sealed with heat resistant sealant (on the top outside edge only) and one screw is used to conveniently retain the End Cap in position. The End Cap is removed annually for maintenance. DO NOT RIVET THE CAP ON or place silicone on the inside of the cap.

The gap between the lower dome on the Cowl and the top of the outer flue should be between 5 - 10mm to ensure a watertight installation while also allowing outer flue to vent.

Do not terminate the flue in any enclosed or semi-enclosed areas such as a carport, garage, attic, crawlspace, narrow walkway, closely fenced area, under a sundeck or porch, or any location that can build up a concentration of fumes and carbon such as stairwells, covered breezeway, etc.

Refer to following diagram for minimum flue termination heights and clearances.

Once the installation is complete, turn the Fire on and test for flue joint leaks by placing a handful of pellets in the Burn Pot Liner. This will create an excessive amount of smoke. Leaks can easily be detected with a torch in a light dimmed room.





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## WALL THERMOSTAT INSTALLATION

- 1. Wiring should be via a twin core shielded cable.
- 2. Keep the thermostat wire away from appliances that emit electrical interference.
- 3. Never run thermostat cable with mains power wires.
- 4. The thermostat should be more than 4 meters from the pellet fire, and out of direct sunlight, or interference from heat generating appliances. Do not mount the thermostat in a draughty location.
- 5. At the fire, the thermostat is connected to a white 2 pin terminal block (blue and brown wires) behind the right hand panel to which the cable should be connected. The wires can go either way around.
- 6. At the thermostat, the 2 wires should be attached to a set of normally closed contacts (open on temperature rise)
- 7. Cable Screen Earth. this should be earthed to the pellet fire main frame earth adjacent to the transformer.
- 8. To activate the Thermostat Control press both the "Heat/Time" switches until a "T" is displayed. This indicates the Thermostat mode is active. In this mode the Thermostat controls the fire and the "Heat/Time" arrows are inactive. The Thermostat will call for more or less heat depending on the Thermostat setting and the fire will deliver more or less fuel as required. The Thermostat will not turn the Fire on or off, if there is excess room temperature the Fire will continue to run at the lowest heat setting.
- 9. To return to manual control over the fire press both the "Heat/Time" switches until the "T" is no longer displayed. The "Heat/Time" switches will now control the fire when pressed.



#### **Document Revisions**

6 June 2008 Rev A - Flue Spacers removed from internal flue kit installation drawing page numbers added

4 July 2008 Rev B - Note added to require cleaning of chimney prior to installing insert fire

11 July 2008 Rev C - Note added re distance between cowl and outer flue in Flue Installation Instructions



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